

What is claimed is:

1. A method of parsing a stream of tokens representative of language usage, the method comprising:

a. Storing a set of packages, each package being representative of a
5 corresponding phrase-structure tree derived from a rule-based grammar; and
b. parsing the stream using the packages to establish a structural description for the stream.

2. A method of parsing a stream of tokens representative of language usage, the method comprising:

10 a. storing a set of packages, each package being representative of a corresponding phrase structure tree associated with a grammar, wherein a subset of the packages includes a set of relational descriptions, and

b. parsing the stream using the packages establish a structural description and a relational description of the stream.

15 3. A method according to any of claims 1 and 2, wherein the grammar further specifies constraints on attribute values, the packages contain information derived from such constraint, and such information is employed in parsing the stream using the packages.

4. A method according to any of claims 1 and 2, wherein packages
20 in the set are selected to satisfy a desired set of constraints.

5. A method according to any of claims 1 and 2, wherein the set of packages includes a first subset of packages for which the depth of the corresponding tree is within a desired first range.

6. A method according to claim 3, wherein the set of packages includes a first
25 subset of packages for which the depth of the corresponding tree is within a desired first range.

7. A method according to any of claims 1 and 2, wherein the set of packages includes a second subset of packages for which the width of the corresponding tree is within a desired second range.

8. A method according to claim 5, wherein the set of packages includes a second subset of packages for which the width of the corresponding tree is within a desired second range.

9. A method according to claim 6, wherein the set of packages includes a second subset of packages for which the width of the corresponding tree is within a desired second range.

10. A method according to any of claims 1 and 2, wherein the set of packages includes a third subset of for which the observed frequency of use in parsing a specific corpus of input streams is within a desired third range.

11. A method according to claim 3, wherein the set of packages includes a third subset of for which the observed frequency of use in parsing a specific corpus of input streams is within a desired third range.

12. A method according to claim 6, wherein the set of packages includes a third subset of for which the observed frequency of use in parsing a specific corpus of input streams is within a desired third range.

13. A method according to claim 7, wherein the set of packages includes a third subset of for which the observed frequency of use in parsing a specific corpus of input streams is within a desired third range.

14. A method according to claim 5, wherein the first subset is identical to the set.

15. A method according to claim 7, wherein the second subset is identical to the set.

16. A method according to claim 10, wherein the third subset is identical to the set.

17. A method according to any of claims 1 or 2, wherein the grammar is a structure function grammar.

18. A method according to claim 1, wherein:

each member of a subset of the packages includes a function template that functionally describes syntax associated with the phrase structure tree that the member package represents, and

parsing the stream includes evaluating relational content of the stream.

19. A method of parsing a stream of tokens representative of language usage, the method comprising:

- a. providing a set of phrase structure definitions, a set of relational structure
- 5 definitions, and a set of mappings between them;
- b. using the phrase structure definitions to provide a phrase structure of the stream; and
- c. using the mappings and the relational structure definitions to process the resulting phrase structure to arrive at a functional description of the stream.

10 20. A method as in claim 19, the method further comprising:

- d. further using the relational structure definitions to process further the functional description and the stream to arrive at a further enhanced functional description.

21. A method of computing a phrase structure description from a given

15 functional description, the method comprising:

- a. providing a set of phrase structure definitions, a set of relational structure definitions, and a set of mappings between them;

- b. using the mappings and the relational structure definitions to process the functional description to arrive at a phrase structure description of the stream

20 22. A method according to claim 21, wherein the given functional description results from using the relational structure definitions to parse a stream of tokens.

23. A method of parsing a stream of tokens representative of language usage, the method comprising:

- a. providing a set of phrase structure definitions, a set of relational structure
- 25 definitions, and a set of mappings between them;

- b. using the relational structure definitions to provide a relational structure of the stream; and

- c. using the mappings and the phrase structure definitions to process the resulting relational structure to arrive at a phrase structure description of the

stream.

24. A method according to any of claims 19, 21, and 23, where the phrase structure definitions, the set of relational structure definitions, and the set of mappings between them are pursuant to a structure function grammar.

- 5 25. A method of computing a semantic representation of an input stream, method comprising:
- a. providing a set of semantic interpretation definitions;
 - b. parsing the stream in accordance with any of claims 2 and 19 to create a functional description; and
 - 10 c. computing the semantic representation from the functional description using the semantic interpretation definitions.